

CLAIMS

[0074] What is claimed is:

1. A method of selectively adjusting colors displayed by a color display, the method comprising adjusting an intensity value of a first primary color component of a pixel based, at least in part, on an intensity value of a second primary color component of said pixel.
5. 2. The method of claim 1, wherein said pixel comprises three or more primary color components.
10. 3. The method of claim 2, wherein said adjusting comprises adjusting the intensity value of said primary color component based on intensity values of all said three primary color components.
4. The method of claim 2, wherein said three or more primary color components comprise four or more primary color components.
15. 5. The method of claim 4, wherein said adjusting comprises adjusting the intensity value of said first primary color component based on intensity values of one or more of said four or more primary color components.
6. A method according to any of claims 1-5 comprising performing said adjusting for a plurality of pixels of a color image to be displayed by said color display.
20. 7. The method of any of claims 1-6, wherein said adjusting comprises calculating an adjusted intensity value for said first primary color component using a conversion operator dependent on one or more of the intensity values of the primary color components.
8. The method of claim 7, wherein said conversion operator comprises a conversion inverse matrix to convert the intensity values of said primary color components in an absolute data format into corresponding values in a device-dependent data format.
25. 9. The method of claim 8, wherein one or more elements of said conversion inverse matrix are dependent on one or more of the intensity values of said primary color components.
30. 10. The method of claim 8, wherein said conversion inverse matrix corresponds to an inverse of a direct conversion matrix.

11. The method of claim 10, wherein said direct conversion matrix comprises elements dependent on the intensity values of said primary color components.
12. The method of any of claims 7-11, wherein said adjusting comprising:
 - 5 determining an initial conversion operator; and
 - converting the intensity values of said primary color components into initial converted intensity values using said initial conversion operator.
13. The method of claim 12, wherein determining said initial conversion operator comprises selecting one or more initial intensity values.
14. The method of claim 13 wherein said initial intensity values are selected
 - 10 according to intensity values of primary color components of a neighbor pixel adjacent to said pixel.
15. The method of any of claims 12-14 comprising:
 - 15 adjusting said conversion operator based on said converted values to provide an adjusted conversion operator; and
 - converting the intensity values of said primary components using said adjusted conversion to provide adjusted converted intensity values.
16. The method of claim 15, wherein adjusting said conversion operator comprises:
 - 20 calculating elements of an adjusted direct conversion matrix based on said converted values; and
 - constructing an inverse matrix by inverting said adjusted direct conversion matrix.
17. The method of claim 16 wherein said calculating comprises:
 - 25 using one or more look up tables to associate each of said converted values with a set of device dependent XYZ values; and
 - constructing said adjusted direct conversion matrix using said XYZ values.
18. The method of any of claims 15-17 comprising comparing between said initial converted intensity values and said adjusted converted intensity values.
19. The method of claim 18 comprising re-initializing said conversion operator according to said adjusted conversion operator.
- 30 20. The method of claim 19, wherein re-initializing said conversion operator comprises substituting elements of said initial conversion operator with respective values of said adjusted conversion operator.

21. The method of claim 19 or 20 comprising repeating said adjusting, said converting based on said adjusted conversion operator, and said re-initializing, until a pre-determined difference between said initial converted intensity values and said adjusted converted intensity values is achieved.
- 5 22. The method of any of claims 1-6 wherein said adjusting comprises:
 - obtaining one or more device-dependent intensity values corresponding to one or more imaginary intensity values of said primary color components; and
 - combining one or more of said device dependent intensity values.
- 10 23. The method of claim 22, wherein said imaginary intensity values comprise the intensity values of said primary color components.
24. The method of claim 22 comprising obtaining said imaginary intensity values by applying a predefined conversion operator to input intensity values of said primary color components.
- 15 25. The method of any of claims 22-24, wherein obtaining one or more device-dependent values comprises using one or more look up tables to associate each of said one or more imaginary intensity values with a respective plurality of said device-dependent values.
26. The method of any of claims 22-25, wherein each of said device dependent values correspond to one of said primary color components.
- 20 27. The method of claim 26, wherein said combining comprises combining said device-dependent values based on said primary color components.
28. The method of claim 27 wherein said combining comprises calculating a sum of the device dependent values corresponding to each of said primary color components.
- 25 29. The method of any of claims 1-6 comprising:
 - adding a sub-adjustment value to a first imaginary intensity value based on a second imaginary intensity value, said first and second imaginary intensity values corresponding to said first and second primary color components, respectively.
30. The method of claim 29, wherein said imaginary intensity values comprise the intensity values of said primary color components.

31. The method of claim 29 comprising obtaining said imaginary intensity values by applying a predefined conversion operator to input intensity values of said primary color components.
32. A display system comprising:
 - 5 a color adjustment unit to selectively adjust an intensity value of a first primary color component of a pixel based, at least in part, on an intensity value of a second primary color component of said pixel.
33. The system of claim 32 comprising a driver to receive said adjusted intensity value from said color adjustment unit and to drive a color display device according to said adjusted intensity value.
- 10 34. The system of claim 32 or 33, wherein said color adjustment unit comprises a logic unit to obtain one or more device-dependent intensity values corresponding to one or more imaginary intensity values of said primary color components, and to combine one or more of said device dependent intensity values.
- 15 35. The system of claim 34, wherein said imaginary intensity values comprise the intensity values of said primary color components.
36. The system of claim 34, wherein said logic unit is adapted to obtain said imaginary intensity values by applying a predefined conversion operator to input intensity values of said primary color components.
- 20 37. The system of any of claims 34-36, wherein said logic unit comprises one or more memory units to store one or more look up tables to associate each of said one or more imaginary intensity values with a respective plurality of said device-dependent values.
38. The system of claim 32 or 33, wherein said color adjustment unit comprises a logic unit to add a sub-adjustment value to a first imaginary intensity value based 25 on a second imaginary intensity value, said first and second imaginary intensity values corresponding to said first and second primary color components, respectively.
39. The system of claim 38, wherein said imaginary intensity values comprise the intensity values of said primary color components.

40. The system of claim 38, wherein said logic unit is adapted to apply a predefined conversion operator to input intensity values of said primary color components to obtain said imaginary intensity values.
41. The system of any of claims 38-40, wherein said logic unit comprises a first memory unit to store a first look up table to associate said sub-adjustment value with said second imaginary intensity value.

5